Instrument Database Recommendation

Recommendation: The Data & Technology Subcommittee of the Office of Financial Research's (OFR) Financial Research Advisory Committee (FRAC) recommends that the OFR adopt the goal of developing and validating a comprehensive ontology for financial instruments as part of its overall effort to meet its statutory requirement to "prepare and publish" a financial instrument reference database.

We recommend that the OFR conduct its own evaluation of private sector initiatives in this area, including Financial Industry Business Ontology (FIBO), to assess whether and how ontology can contribute to the goal of both transparency and financial stability analysis. We recommend that the OFR participate with the industry and with the standards bodies in the development process, help establish implementation priorities and assist in marshalling resources for its completion in line with regulatory and financial industry objectives. If the result of this engagement and evaluation process is positive, we believe it important for the OFR to have an oversight role in the governance of the industry-wide ontology similar to the role that the Regulatory Oversight Committee performed for the Legal Entity Identifier (LEI) initiative. This form of public sector governance oversight would be significant in helping with both global and industry-wide adoption.

Summary:

The OFR is obligated to "prepare and publish" a financial instrument reference database under Title I of the Dodd-Frank Wall Street and Consumer Protection Act (DFA). We believe that developing and promoting an ontology for financial instruments should be a part of the OFR's response to this statutory obligation. We recommend that the OFR review existing private sector ontology initiatives to determine the role they can play in fulfilling the OFR's statutory obligation regarding an instrument database and its broader mandate to promote transparency.

Background:

An ontology of financial instruments is a standardized set of terms that are capable of capturing all of the essential characteristics, relationships and dependencies of financial contracts in a consistent, meaningful and precise way. Terms are uniquely defined and key relationships are precisely specified. An ontology of financial instruments can provide a standard framework and common reference point for consistently analyzing and aggregating the concepts and obligations expressed in legal contracts.

The importance of ontology is directly related to dramatic increases in transaction volumes and the growing complexity of financial products across the industry. In order to effectively manage risk in this interconnected environment, large firms are required to capture and validate data from millions of discrete daily transactions as well as classify and aggregate that information in ways that are meaningful for both internal risk management and external reporting. The core problem is that market participants have each implemented a multitude of systems leveraging

existing technology and models using their own data definitions.[1]

These "semantic" differences create problems with integration among business lines and were contributors to critical failures in risk management at many large financial institutions in the run-up to the financial crisis. In many cases, firms simply did not have the capacity to unravel their counterparty exposures, evaluate risk concentrations, determine VaR limits, derive earnings-at-risk calculations or achieve firm-wide views of all meaningful dimensions of risk. [2]

The development of a comprehensive and widely accepted ontology of financial instruments would greatly facilitate the ability of regulators to make ad hoc data requests, and to make analytical inferences, without being restricted by inconsistencies in data meaning or by the limitations of rigid data structures.

The challenges associated with aggregating data on derivatives transactions that are collected in Swap Data Repositories is a microcosm of the larger industry-wide problem. Derivatives present a problem from a data perspective because they can be uniquely customized bilateral contracts among multiple parties with highly variable terms, conditions and roles performed. In order to perform data validation, aggregate based on specific components, assess the various aspects of counterparty risk or unravel dependencies - the underlying data about the derivative instrument must be precisely defined and comparable across the industry.

In today's fragmented data environment, the comparability objective is elusive because the data is sourced from many places and reported to a variety of independent data repositories without a common data standard. The lack of a common standard for data meaning results in the use of common words that mean different things and the expression of common concepts using a variety of words. In order to reconcile the problems created by the lack of a common set of concepts and associated terms, industry participants are engaged in a continual process of data reconciliation. Many of these processes are manual and prone to error. Also, as these reconciliation efforts are multiplied across a variety of interdependent processes, the result is a mismatch of underlying data, divergence in calculation, and lack of comparability. This significantly undermines trust in, and value of, regulatory reporting.

---

[1] The concept of data harmonization and the importance of cross-industry data comparability that were key components of the Principles for Effective Risk Data Aggregation and Risk Reporting (BCBS 239) published by the Basel Committee on Banking Supervision in January 2013. These concepts are being implemented as mandatory requirements across most regulatory regimes. BCBS Principle number two emphasizes the implementation of … "unique identifiers, common financial language, aligned data infrastructure, unified naming conventions and integrated data taxonomies" as the essential prerequisite for effective risk data aggregation.

[2] This was the conclusion of the Senior Supervisors Group (SSG) in their 2010 report titled *Observations on Developments in Risk Appetite Frameworks and IT Infrastructure*. The SSG report went further in describing the fundamental importance of adopting common financial language to support "rapid and relatively seamless data transfer and to enable a consistent approach to integrate multiple records of risk data in a timely manner across the firm."

The private sector has recognized the benefits of having a commonly accepted set of concepts and terms to improve data quality, reduce the need for reconciliation, align data across linked processes and better perform enterprise-wide risk analysis. Efforts to develop the FIBO initiative, an important response to this need, have been under way for some time and are being coordinated by the Enterprise Data Management Council (EDM Council[3]).

FIBO is a data meaning standard that was created in response to three concrete problems: inconsistencies in the identification of price types for use in end-of-day valuations; limitations of XML messaging schemas to address the problem of how to align reference data stored in multiple databases; and a lack of harmonization in mapping municipal bond data using structured data models.

FIBO is intended as a common reference point (a type of Rosetta Stone) to ensure that data from different sources can be combined or compared in a meaningful way. It establishes unambiguous shared meaning about financial concepts including the ability to create links and relationships to support enhanced analytical capabilities. FIBO contains glossaries of terms and definitions borrowed from a range of existing standards.[4] It contains a definition of relationship facts that are precisely defined and captured as business rules for automated data processing. It is the combination of terms, definitions and relationships that helps to ensure data comparability and enables flexible analysis.

FIBO is being managed as an open standard under the technical governance of the Object Management Group (OMG[5]). FIBO is not complete, but it is well advanced. The core of the specification has been released as a formal standard with unanimous support of the OMG architecture board. The product components of FIBO (listed instruments, derivatives, indices, structured instruments, funds and loans) have been modeled and verified by subject matter experts and have been integrated into the OMG standards release process. The industry expects the approved financial instrument ontology to be finalized before the end of 2014.

[3] EDM Council is a global not-for-profit trade association created by financial industry participants to address common data challenges.

[4] FIBO incorporates elements from existing financial data standards including FpML, ISO 20022, XBRL, MISMO and FIX.

[5] OMG is an international not-for-profit computer industry standards consortium.